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Effects of Smokeless Tobacco (Slt) On the General and Reproductive Health of Women in Selected Villages of Udupi District, Karnataka

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Abstract
Objective: The main objective of the study was to find the association between smokeless tobacco use and general and reproductive health problems.
Materials and methods: The study population consisted of 800 women from selected villages of Peranankila Panchayat, Udupi district. Four villages of the Panchayat were selected through simple random technique and purposive sampling was used to select the samples. Data were collected by administering background proforma and rating scale for the assessment for health problems.
Results: Out of the 800 women surveyed, 90 women were using smokeless tobacco. Majority of the women 30 (33.3%) who used smokeless tobacco reported that they had excessive vomiting during pregnancy followed by severe nausea (31.1%). Majority of the women reported that they had low birth weight babies (8.9% of users and 3.5% of non-users). All the women who used smokeless tobacco had stained teeth. Chi-square and odds ratio was computed to find the association. Low backache was the commonest problem among the women [users (23.3%) and non-users (4.5%)]. There were 70% of women who use smokeless tobacco who had one or more obstetrical problem whereas it is 37.5% among the non-users. Neonatal problems in women who use SLT were 22.2% whereas it is 9.3% among women who did not use SLT. A significant association was found between smokeless tobacco use and obstetrical, neonatal, oral, reproductive health and other problems. No association was found between smokeless tobacco use and gastrointestinal and urinary problems.
Conclusion: The International Agency for Research on Cancer (IARC) has found that people who chew both the betel leaf and the areca nut have a higher risk of damaging their gums and having cancers of the mouth, pharynx, esophagus, and stomach. Findings of the present study concluded that there was a significant association between smokeless tobacco use and obstetrical problems, neonatal problems, oral problems and reproductive health problems.

Keywords: Smokeless tobacco, women, health problems.

Introduction
Smokeless tobacco consumption is a serious threat which affects the mankind universally. In spite of its global use and the serious health risks linked to it, the issue of using smokeless tobacco has not gained much attention. Smokeless tobacco consumption is a common tradition especially common in south Asian origin. It is estimated that at least 25% of adults in India and Bangladesh routinely use smokeless tobacco.
Tobacco use is the single most preventable cause of death globally. Tobacco accounts for around 5 million deaths every year which makes it the second major cause of death worldwide. By 2020, this may reach up to 9 million the majority being in the developing countries.
The International Agency for Research on Cancer (IARC) has found that people who chew both the betel leaf and the areca nut have a higher risk of damaging their gums and having cancers of the mouth, pharynx, esophagus, and stomach. Mishri, gudakhu and toothpastes involve direct application of tobacco to the gums which increases the risk of cancer of the gums. These forms are very common among the women. (American cancer society)
According to the Global Adult Tobacco Survey, India (2010), 34.6% of adults are tobacco users of which 47.9% are males and 20.3% are females. Smokeless tobacco use in adults consists of 25.9%. 18.4 % is contributed by the female population. This report also highlighted that the average age at initiation of tobacco use was 17.8 with 25.8% females starting tobacco use before the age of 15. (Kumar S 2012)
An article on the prevalence of smokeless tobacco use among adults in WHO South East Asia stated that around 22.7% of adults above the age of 15 in Karnataka uses some form of smokeless tobacco. (Ministry of health and family welfare-Global Adult Tobacco Survey FACT SHEET 2009-2010)

A cross sectional study was done by Daniel A.B. *et al* (2008) to estimate the prevalence and determinants of tobacco use in a rural community in Southern India. 832 individuals were included in the study. The findings revealed that 15.7% of the women were daily users of tobacco. Among them, 55.7% used chewing tobacco. The commonest reason reported for initiating tobacco chewing was to relieve tooth ache. This study highlights the use of smokeless tobacco among women in the region in spite of the continuing efforts by the Government to lessen the burden caused by it. It aimed to find whether there is any association with general and reproductive health problems

Materials and Methods

A descriptive survey approach with cross sectional research design was used for the study. The study population consisted of married women (20-50 years) residing in selected villages of Udupi district. Four villages were selected through simple random technique. A house to house survey was conducted to select the samples. Total sample size was 800.

Study was conducted after obtaining administrative permission. Ethical clearance was obtained from Institutional Ethics Committee. Informed consent was taken from all participants.

Data collection instruments were developed by the researcher. Content validity and reliability was established. The instruments used to gather data were a demographic proforma consisting of 24 items to collect data on personal history, partner's history, Obstetrical and menstrual history. A valid and a reliable rating scale having 27 items addressing the general health concerns and 18 items pertaining to reproductive health concerns was used. The interview technique was used to gather data from the women. Data was collected in the month of January and February 2014 in selected villages of Udupi district.

Results

The data were first coded and analyzed using SPSS 16.

Description of sample characteristics:

Among the 800 women surveyed, 90 were using smokeless tobacco.

The sample characteristics are described in terms of frequency and percentage in table 1 and 2.

Table 1: Frequency and Percentage distribution of sample characteristics

n=800

Sl.no	Sample characteristics	SLT users n=90		SLT non-users n=710		Total
		f	%	*f*	%	*F*
1.	**Age (in years)**					
	20-30	7	10.45	60	89.55	67
	31-40	42	9.9	382	90.09	424
	41-50	41	13.27	268	86.73	309
2.	**Education**					
	Illiterate	21	20.39	82	79.61	103
	Up to 10th	63	16.11	328	83.89	391
	PUC	6	2.26	259	97.74	265
	Graduate	0	0	35	100	35
	Post graduate	0	0	6	100	6
3.	**Religion**					
	Hindu	87	11.43	674	88.57	761
	Christian	0	0	26	100	26
	Muslim	3	23.08	10	76.92	13
4.	**Occupation**	31	10.16	274		305
	Housewife	18	13.14	119	89.84	137
	Coolie	6	8.82	62	86.86	68
	Fish seller	15	10.56	127	91.18	142
	Agriculture				89.44	39
	Beedi worker	6	15.38	33	84.62 69.57	46
	Factory worker	14	30.43	32	100	46
	Others	0	0	46	100	17
	Office work	0	0	17		
5.	**Monthly income in rupees**					
	less than 5000	9	100	0	0	09
	5001-7000	33	75	11	25	44
	7001-10000	34	7.93	395	92.07	429
	more than 10000	14	4.4	304	95.6	318
6.	**Type of family**					
	Joint	45	12.71	309	87.29	354
	Nuclear	45	10.09	401	89.91	446

As shown in table 1, among the 800 women surveyed, 90 women use smokeless tobacco at present, most of them were in the age group of 31-40 years. Among the users, 50% belonged to joint family and the other 50% to nuclear family.

Table 2: Frequency and Percentage of sample characteristics with regard to marital history

n=800

Sl.no	Sample characteristics	SLT Users n=90		SLT Non-Users n=710		Total n=800
		f	%	*f*	%	*F*
1.	**Age at marriage**					
	<18 years	31	30.39	71	69.61	102
	18-24 years	59	8.85	608	91.15	667
	25-30 years	0	0	31	100	31
2.	**Duration of marriage**					
	10 years or less	12	15.19	67	84.81	79
	11-14 years	21	16.03	110	83.96	131
	16-20 years	15	5.15	276	94.85	291
	21-25 years	21	10.29	183	89.71	204
	>25 years	21	22.1	174	77.89	95
3.	**Consanguineous marriage**					
	Yes	13	59.09	09	40.9	22
	No	77	9.9	701	90.10	778
4.	**Age of partner**					
	31-40 years	06	6.38	88	93.6	294
	41-50 years	37	9.92	336	90.08	373
	51-60 years	34	12.59	236	87.41	270
	>60 years	13	20.63	50	79.37	63
5.	**Education of partner**					
	Illiterate	33	22.92	111	77.08	144
	Up to 10^{th}	51	13.63	24	86.43	75
	PUC	06	2.63	222	97.37	228
	Graduate	0	0	53	100	53
6.	**Occupation of partner**					
	Office work	04	4.82	79	95.18	83
	Shopkeeper	0	0	24	100	24
	Coolie	32	16.24	165	83.76	197
	Fish seller	07	10.29	61	89.71	68
	Agriculture	25	12.38	177	87.62	202
	Beedi worker	11	14.67	64	85.33	75
	Factory worker	10	13.7	63	86.3	73
	Others	01	1.28	77	98.72	78

As shown in the table 2, among the smokeless tobacco users, majority of the women were married between 18-24 years of age. Maximum women were married for the last 16 to 20 years. Among the users, there were 21 women in 11 to 14 years, 21 to 25 years and >25 years each. Among the users, 13 women had consanguineous marriage.

Association between smokeless tobacco use and general health problems

Table 3: Association between smokeless tobacco use and general health problems

n=800

Sl.no	Health problems			χ^2	df	*p* value
1.	**Obstetrical**					
		Yes	**No**			
	SLT Users	64	26	37.31	1	0.00*
	SLT Non-Users	266	444			
2.	**Neonatal**					
		Yes	**No**			
	SLT Users	20	70	13.91	1	0.00*
	SLT Non-Users	66	644			
3.	**Oral**					
		Yes	**No**			
	SLT Users	90	0	3.68	1	0.056
	SLT Non-Users	84	626			
4.	**Gastrointestinal**					
		Yes	**No**			
	SLT Users	05	85	3.63	1	0.056
	SLT Non-Users	11	699			
5.	**Urinary**					
		Yes	**No**			
	SLT Users	04	86	2.22	1	0.136
	SLT Non-Users	14	696			

Table 4: Association between smokeless tobacco use and general health problems

n =800

Sl. no	Health problems	Users *n*=90	Non-Users *n*=710	OR	C.I	p value
1.	**Obstetrical**					
	Yes	64	266	4.109	2.54-6.64	0.00*
	No	26	444			
2.	**Neonatal**					
	Yes	20	66	2.788	1.59-4.87	0.00*
	No	70	644			
3.	**Gastrointestine**					
	Yes	05	85	2.95	0.92-9.48	0.07
	No	11	699			
4.	**Urinary**					
	Yes	04	14	2.15	0.69-6.64	0.18
	No	86	696			

*significant at p < 0.05 level of significance

As shown in Table 3 & 4, there was a significant association was found between smokeless tobacco use and obstetrical problems (χ^2=37.31 p value=.00), neonatal problems (χ^2=13.91 p value=.00), oral problems (χ^2=3.68 p value=.00) and other problems (χ^2=9.38 p value=.002). No association was found between smokeless tobacco use and Gastrointestine and urinary problems.

Association between smokeless tobacco use and reproductive health problems

Table 5: Association between smokeless tobacco use and reproductive health problems.

n=800

Sl.no	Health problems			χ^2	df	p value
1.	**Reproductive**					
		Yes	**No**			
	SLT Users	45	45	73.2	1	0.00*
	SLT Non-Users	96	614			

*significant at p < 0.05 level of significance

Table 6: Association between smokeless tobacco use and reproductive health problems

n=800

Health problems	Users *n*=90	Non-Users *n*=710	OR	C.I	p value
Reproductive					
Yes	45	96	6.39	4.01-10.19	0.00*
No	45	614			

*significant at p < 0.05 level of significance

As shown in Table 5 & 6, significant association was found between smokeless tobacco use and reproductive health problems (OR=6.39, CI=4.01, 10.19, p value=.000).

Discussion

Findings of the present study revealed that there was a significant association between smokeless tobacco use and obstetrical problems (χ2=37.31 p value=.00), neonatal problems (χ2=13.91 p value=.00), oral problems (χ2=3.68 p value=.00), other problems (χ2=9.38 p value=.002) and reproductive health problems (χ2=73.2; p value=.00)

The findings of the study were consistent with the study conducted by Jua rez S.P and Merlo J 2013 to investigate the effect of Swedish smokeless tobacco (snus) on birth weight of infants comparing the results gathered from a conventional linear regression analysis and from a quasi-experimental sibling design using a multilevel linear regression analysis. 604804 babies were studied. The analysis showed that continuous SLT use throughout the pregnancy decreases birth weight while quitting the habit has a minor statistically non-significant effect. (Juarez, Merlo (2013).

A systematic review was done by Critchley A and Unal B to evaluate the health risks associated with smokeless tobacco use. 94 studies were included in the review. They concluded that there is a substantial risk for oral and oropharyngeal cancer with chewing betel quid and tobacco. (Critchley and Unal (2003)

A cohort study was conducted by (Boffetta P *et al*., 2005), to assess smokeless tobacco use and risk of carcinoma of pancreas in Norway. 2 groups of subjects were studied: general population and relatives of Norwegians who migrated to U.S. 12,431 men were involved in the study. The results showed that there was an increased RR of cancer of pancreas among snus users, and the RR of pharyngeal, oral, esophageal and stomach cancer showed a fair, non-significant increase. There was no increase in the risk of cancer of lungs and of other cancers included in the analysis.

Another population based cohort study was conducted by Baba S *et al*., in Sweden to find associations between antenatal exposure and Swedish oral moist snuff or smoking and risks of small-for-gestational-age (SGA) babies and to compare the results between women who stopped and who continued snuff or smoking during pregnancy. All live births (singletons) were included. The results reveled that smokers and snuff users had increased chances of having SGA. Snuff users a stronger association with preterm SGA than term SGA, whereas the result was opposite for smoking. Compared with non- users, women who gave up using snuff before their first antenatal visit had no increased risks of SGA (preterm and term), and women who quitted snuff later in pregnancy had no greater risk of term SGA. Smoking cessation early in pregnancy was associated with a decrease in risk than smoking cessation later in pregnancy. The present study also showed that there is a significant association between SLT use and obstetrical problems. (Baba S, et.al. 2013)

Conclusion

Smoking is rare among Indian women, but research over the past decade has shown that Indian women's use of smokeless tobacco products is substantial [Reddy *et al*.,] and increasing, with negative consequences for both oral morbidity (Sankaranarayanan. *et al*.,) and perinatal health, including premature delivery, low birth weight and birth length (Gupta *et al.*). Indian researchers have shown that these consequences are dose responsive, increasing with the amount of SLT used. Findings of the present study concluded that there was a significant association between smokeless tobacco use and obstetrical problems, neonatal problems, oral problems and reproductive health problems.

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